

## **AMENDMENTS TO THE CLAIMS**

A complete listing of the claims is provided hereinafter.

### **Please amend the claims as follows:**

Claim 1 (Currently amended): A method for generating a hydrocarbon reservoir model, comprising:

providing a ~~first~~ reservoir framework having a plurality of three-dimensional cells, ~~wherein the first framework is a reservoir framework; and~~

~~providing~~ building a ~~second~~ cell framework having a plurality of cells, wherein the volume of the ~~first~~ reservoir framework is greater than the volume of the ~~second~~ cell framework, and wherein the cell framework comprises two or more cells of the reservoir framework;

populating some or all of the cells of the cell framework with one or more reservoir property values to generate a three-dimensional cell model;

performing, on a computer, a flow simulation on the cell model to generate one or more effective reservoir property values for the reservoir framework;

calculating, on a computer, the variability between the reservoir property values for the reservoir framework;

determining whether the rate of change in the variability between the effective reservoir property values remains substantially the same;

populating the reservoir framework with the effective reservoir property values to generate the hydrocarbon reservoir model; and

outputting the hydrocarbon reservoir model.

Claim 2 (Currently amended): The method of claim 1, wherein the volume of the ~~second~~ cell framework is substantially the same size as one of the cells of the ~~first~~ reservoir framework.

Claim 3 (Currently amended): The method of claim 1, wherein each one of the cells of the ~~second~~ cell framework is substantially the same size as a sample of well data.

Claim 4 (Currently amended): The method of claim 1, wherein each one of the cells of the ~~second~~ cell framework is substantially the same size as a sample of core data.

Claim 5 (Currently amended): The method of claim 1, wherein each one of the cells of the ~~second~~ cell framework is substantially the same size as a sample of log data.

Claim 6 (Currently amended): The method of claim 1, further comprising identifying some or all of the cells of the ~~second~~ cell framework as net or non-net.

Claim 7 (Currently amended): The method of claim 1, further comprising identifying some or all of the cells of the ~~second~~ cell framework as sand or shale.

Claim 8 (Currently amended): The method of claim 1, further comprising populating some or all of the cells of the ~~second~~ cell framework with net and non-net values.

Claim 9 (Currently amended): The method of claim 1, further comprising receiving one or more estimated rock-type fraction values of the ~~first~~ reservoir framework.

Claim 10 (Currently amended): The method of claim ~~[[1]]~~ 9, further comprising ~~receiving one or more estimated rock-type fraction values of the first framework; and~~ identifying some or all of the cells of the ~~second~~ cell framework as net or non-net according to the estimated rock-type fraction values of the ~~first~~ reservoir framework.

Claim 11 (Currently amended): The method of claim ~~[[1]]~~ 9, further comprising ~~receiving one or more estimated rock-type fraction values of the first framework; and~~ populating some or all of the cells of the ~~second~~ cell framework with net and non-net values according to the estimated rock-type fraction values of the ~~first~~ reservoir framework.

Claim 12 (Canceled)

Claim 13 (Currently amended): The method of claim 1, ~~further comprising~~  
~~populating some or all of the cells of the second framework with~~ wherein the one or  
more reservoir property values comprise one or more porosity values.

Claim 14 (Currently amended): The method of claim 1, ~~further comprising~~  
~~populating some or all of the cells of the second framework with~~ wherein the one or  
more reservoir property values comprise one or more permeability values.

Claim 15 (Currently amended): The method of claim 1, ~~further comprising~~  
~~populating some or all of the cells of the second framework with~~ wherein the one or  
more reservoir property values comprise one or more water saturation values.

Claims 16-19 (Canceled)

Claim 20 (Original): The method of claim 1, wherein the reservoir model is a flow  
simulation model.

Claim 21 (Original): The method of claim 1, wherein the reservoir model is a  
geologic model.

Claim 22 (Currently amended): The method of claim 1, wherein the volume of the  
~~second~~ cell framework is greater than the size of one cell of the ~~first~~ framework.

Claims 23-24 (Canceled)

Claim 25 (Currently amended): ~~[[The]]~~ A method of claim 1, further for generating  
a hydrocarbon reservoir model, comprising:

providing a reservoir framework having a plurality of three-dimensional cells;

building a cell framework having a plurality of cells, wherein the cell

framework comprises two or more cells of the reservoir framework;

selecting a net-to-gross value from a set of estimated net-to-gross values;

populating cells of the cell framework with rock-type values that correspond  
to the selected net-to-gross value;

populating ~~some or all of the~~ cells of the ~~second~~ cell framework with one or  
more reservoir property values to generate a reservoir cell model; [[and]]

extracting one or more cell samples from the ~~reservoir~~ cell model, wherein each cell sample is substantially the same size as one cell of the first framework; [[and]]

performing, on a computer, a flow simulation on the cell sample to generate one or more effective reservoir property values;

calculating, on a computer, a variability in effective reservoir property values;

extracting other cell samples from the cell model when a user-specified number of cell samples has not been sampled, and performing on a computer a flow simulation on said other cell samples, and further calculating the variability in effective reservoir property values generated from said other cell samples;

selecting another net-to-gross value from the set of estimated net-to-gross values when a user-specified number of cell samples has been sampled; and

outputting the effective reservoir property values when a change in the variability of effective reservoir property values is less than a predetermined amount.

Claim 26 (Currently amended): The method of claim 1, wherein the ~~second~~ cell framework is three dimensional.

Claims 27-53 (Canceled)

Claim 54 (Original): The method of claim 9, wherein the rock-type fraction values are net-to-gross values.

Claim 55 (Original): The method of claim 10, wherein the rock-type fraction values are net-to-gross values.

Claim 56 (Original): The method of claim 11, wherein the rock-type fraction values are net-to-gross values.